Understanding
Quality Assurance Concepts

A Health Team Training on Quality Assurance

October 2000

INTRODUCTION

BACKGROUND

The Program Management Technical Advisors Team (PMTAT) is part of the Integrated Family Planning and Maternal Health Program (IFPMHP) funded by the United States Agency for International Development (USAID). PMTAT provides technical support to the Department of Health (DOH) and Local Governments Units (LGU) through the implementation of the Sentrong Sigla Movement and the LGU Performance Program (LPP). The Sentrong Sigla Movement integrates various public health programs and promotes the adoption of quality health care standards and the increase in service utilization.

LPP started in 1994 as a partnership of the DOH and LGUs to expand the devolved delivery of high quality family planning and selected maternal and child health services. LPP is focused on what is now known as Matching Grants Program (MGP) which provides technical assistance and performance-based grants, partially matched with funds from participating municipalities. LPP assists municipalities to prepare a grant application and implement various improvements in the delivery of health services according to their local needs. LPP also assists municipalities to meet Sentrong Sigla Standards and have their facilities certified as Sentrong Sigla.

Based on the experience of Management Sciences for Health (MSH) in other countries with a decentralized health system, and in the improvement of LGU performance and hospital management in the Philippines, PMTAT is pleased to present a series of modules for LGUs to improve the quality and sustainability of their health services. The module maybe used for formal training of health teams or as self-instructional teaching aids to improve management systems that expand service delivery and improve quality of health services.

This module on quality assurance is a part of a set of modules made available to participating LGUs in the Matching Grant Program of the LPP.

THE MODULE

This module on "Understanding Quality Assurance Concepts" is divided into two exercises with the following contents:

>   Exercise #1 Defining quality, quality assurance and quality improvement
>   Understanding quality improvement and corresponding tools and
>   techniques
>   Organizing quality circles or quality improvement teams

>   Exercise #2 Understanding 5 "S" Concepts
>   Applying 5 "S" in the Workplace

Each exercise contains a checklist for facilitator/s, a simple plan for its goal, objectives and time needed for the technical contents. It also has a facilitator's column with notes and instructions to guide the health team's exercise.

This module is a good tool for local health teams who are interested in improving the quality of their health services and who are interested enough to actively participate in the health team exercises.

> # WELCOME TO OUR
> # HEALTH TEAM TRAINING ON
> # QUALITY ASSURANCE!

EXERCISE # 1:

UNDERSTANDING QUALITY ASSURANCE CONCEPTS
This exercise focuses on:

❏ Defining Quality, Quality Assurance and Quality Improvement

❏ Understanding Quality Improvement and Corresponding Tools and Techniques

❏ Organizing Quality Circles Or Quality Improvement Teams

CHECKLIST FOR
THE FACILITATOR OF EXERCISE #1

<u>Before</u> the meeting, you should do the following things. Please check them off when done:

❏ Read through the entire exercise before the assigned day. Focus on the Facilitator's instructions (left-hand column) so you will know how to proceed.

❏ Be sure that a full 6 hours are available for this exercise alone.

❏ Prepare the following materials for the exercise:

    ❏ Materials: Flipchart stand and paper (or similar equipment), markers for the flipchart, transparencies, transparency markers, overhead projector, idea cards of different colors, manila paper, scissors and masking tape.

    ❏ Data (Refer to Annex A):
      1. Organizational chart of the health facility.
      2. Health mission, vision or mandate (RHU level, if none, city or municipal level)
      3. Systems and procedures in the health facility to include: monitoring/supervision, planning, information system, referral system, procurement system, client flow, etc.

❏ Make sure all members of the Health Team who will be participating know <u>when</u> and <u>where</u> to meet, and ask them to bring the following:
    1. Their exercise book.
    2. Paper and a pencil, if the health center cannot provide these.

<u>During</u> the meeting, remember that the facilitator is not expected to have all the answers! Your role is simply to guide the discussion by following the exercise book and facilitating everyone else's participation.

❏ During each exercise, refer to the Facilitator's Notes provided in the left-hand column of every page. (Look for the Facilitator's symbol: ☞)

❏ Actively encourage everyone to participate! This is the reason for using "reading" as a major training methodology.

❏ Encourage participants to respect and listen to everyone else's opinions.

❏ Encourage participants to speak in a loud enough voice so that the others may hear what they have to say.

❏ Keep track of time and keep things moving, so that the Health Team can finish the entire exercise during this meeting. If it will not be possible, stop early and have the group decide when and how to finish today's exercise.

❏ Before the end, make sure that someone is assigned to serve as the facilitator for the next exercise and that a tentative time is set for that meeting.

PLAN FOR EXERCISE #1

Today we will do Exercise #1, called: Understanding Quality Assurance Concepts

WHAT IS THE MAIN GOAL OF THIS EXERCISE?

This exercise will help us understand the concepts of quality assurance and quality improvement and relevant tools and techniques.

WHAT WILL WE DO IN THIS EXERCISE?

We will:

1. Discuss QA concepts and arrive at a common understanding on the following:
   a. Quality
   b. Quality assurance
   c. Quality improvement

2. Discuss and arrive at a common understanding on the following three (3) components of quality assurance:
   a. Quality design
   b. Quality control
   c. Quality improvement

3. Review existing systems and procedures relevant to quality design and control.

4. Discuss the most common quality improvement tools and techniques.

5. Discuss the need to organize a quality improvement team (QIT) or quality circle (QCs).

6. Plan to organize a QIT or QC and other activities.

HOW LONG WILL IT TAKE US TO COMPLETE THIS EXERCISE?

We should plan for at least 6 hours if possible.

Defining Quality, Quality Assurance And Quality Improvement

INTRODUCTION:

In 1998, the Department of Health (DOH) in partnership with local government units (LGUs) initiated a movement to improve the quality of health services. This initiative, known as *Sentrong Sigla Movement* (SSM), has two major complementing strategies: the Certification/Recognition Program (CRP) and Continuous Quality Improvement (CQI). By June 2000, close to 600 health facilities have been certified as Sentrong Sigla under the CRP including rural health units, health centers, and provincial and district hospitals.

Under the CQI strategy, tools and techniques to continuously improve the quality of health services will be introduced to health staff. This will be over and beyond the compliance to quality standards under the CRP. Some LGUs have already been trained on CQI concepts under other DOH projects.

Under Sentrong Sigla Movement, all types of DOH-CQI training, modules and resources will be made available to participating LGUs and their health facilities that are interested in improving the quality of their health services and intend to seek out ways to identify areas for improvement.

Since we have expressed our interest to continuously improve the quality of our health services, DOH made this module available for our reference.

STEP 1. DEFINING QUALITY

Quality means different things to different people, in fact, there are many definitions of "quality" given by various quality experts. *"Quality can be interpreted as meeting both the clients' expressed standards and when standards (e.g. program) are fully met."* Other popular definitions on quality have been derived from this statement.

To understand the different definitions of quality, it is easier to classify the definitions into three, depending on the views of different quality professionals:

- o **Customer or Client-based Definitions:**

  - Edwards (1968) *"Quality consists of the capacity to satisfy wants"*

  - Gilmore (1974) *"Quality is the degree to which a specific product or service satisfy the wants of a specific customer or client"*

  - Juran (1988) *"Quality is fitness for use"*

  - Oakland (1989) *"The core of quality approach is to identify and meet the requirements of both internal and external customers"*

- o **Manufacturing or Service-based Definitions:**

  - Crosby (1979) *"Quality means conformance to requirements"*

  - Price (1985) *"Do it right the first time"*

- o **Value-based Definitions:**

  - Broh (1982) *"Quality is the degree of excellence at an acceptable price and the control of variability at a low cost"*

  - Feigenbaum (1983) *"Quality is the degree to which a specific product conforms to a design or specification"*

  - Kanji (1990) *"Quality is to satisfy customers' requirements continually; total quality management (TQM) is to achieve quality at a low cost by involving everyone's daily commitment"*

- o **Sentrong Sigla Movement definition of quality:**

  - *Quality means the highest values we hold and should be reflected in how we deliver health services*

Reading the definitions, as service providers, we know that we have:

1. *To provide a type of health service or procedure correctly the first time*. This means doing the service correctly (the first time) based on established requirements and protocols, e.g. diagnosis and treatment of acute respiratory infections (ARI.)

2. *To satisfy our clients (external customer) and ourselves (internal customer).* Our patients or clients are the most important "external" customers, however, health providers like ourselves are also "internal" customers, in the sense that we have to be satisfied with what we do, are technically equipped and are being continuously updated through training, conferences and other activities.

3. *To achieve the highest level of quality at a low cost by ensuring everybody's commitment and cooperation.* Quality should not be costly; instead, we should strive to achieve optimum quality services based on what we have and by considering the required standards for the type of facility, e.g. Sentrong Sigla standards for Rural Health Units (RHUs) or Health Centers (HCs.)

STEP 2. DEFINING QUALITY ASSURANCE

After coming to terms on the meaning of quality as it applies to us, let us try to understand *quality assurance.* But before we proceed, let us do a quick survey (See Annex B) to assess where we are in terms of having quality assurance activities or processes. Since assuring quality means always doing things correctly, with the least effort and at the least cost, let us understand that *quality assurance is a work philosophy where everybody is motivated to think of "quality". Quality assurance also means finding ways to improve and be more efficient in doing one's job, to satisfy our clients and ourselves, too.*

Quality Assurance is a *work philosophy* that encourages every member of an organization to think of "quality" and find new and better ways of doing things. Quality assurance has three components:

- Quality design
- Quality control
- Quality improvement

We can say that we practice quality assurance if our work is *designed* for quality, can *control* the quality of services we provide and continuously find ways of *improving* services. These three words: *design, control* and *improvement* are the three components of quality assurance. The first two components are briefly discussed below with accompanying exercises:

- **Quality design** is the initial and an integral component of quality care. A facility like ours can emphasize quality of care by considering quality into our mission, objectives, resources, guidelines and standards. For example, if our mission and resources are focused on quality, all day-to-day operations will be quality oriented. For example, the facility 's mission, type of services and knowing who the clients are should be clear and well defined.

  We will now review our mission and our health services. If we do not have these, we need to define what these should be, i.e. what services we should provide, who and how our clients/patients would be served.

  Let us conduct an exercise to check if indeed our facility has a quality design:

  - o Exercise: Let's review our facility's mission and the list of services we provide and let's identify who our clients are. Our health officer will do the presentation using the accomplished Annex A on transparencies or manila paper.

- **Quality control** is assessing our facility's activities to ensure that the quality design is being implemented. This includes monitoring, supervision and periodic evaluation. Indicators are used to measure different aspects of quality. For example, we supervise our staff, e.g. midwives, to assess if they are managing patients based on protocols on management of diarrheal diseases (CDD treatment protocol.)

  Let us conduct an exercise to check if indeed our facility has control mechanisms or systems in place:

  o Exercise: Let's review our monitoring, supervision and evaluation activities. Let us check if these systems are set-up to the level of quality of services we provide. Let us hear from our nurse supervisor who will show us the flow chart of the supervision/monitoring process (use transparencies or manila paper.)

- **Quality improvement**

As health service providers, we continuously search for ways to improve our services, find ways of ensuring that our clients receive the best service possible and be confident that we provide the service based on quality standards. Let us now focus our attention to the quality improvement component of quality assurance in order to put quality assurance into action.

STEP 3. FOCUSING ON QUALITY IMPROVEMENT, TOOLS AND TECHNIQUES

Quality improvement focuses on exceeding standards for quality and raising those standards to an even higher level. We can increase our level of quality and raise our standards by *solving problems* and *improving processes* in the facility. These efforts work best when problems or areas for improvement are addressed systematically using a *consistent* and *analytic* approach.

The key to quality improvement and successful problem resolution is the ability to identify a problem, use appropriate tools based on the nature of a problem and communicate the solutions to others.

This Exercise #1 provides the most basic tools that will be helpful to us in undertaking and dealing with our problems to improve quality. The following tools are the most widely used by health staff involved in quality improvement efforts.

Tool No. 1: Organizing our Quality Circle (QC) or Quality Improvement Team (QIT)

QCs and QITs are tools for quality improvement. These teams or groups are said to have originated in Japan in the 1960's but some argue it started in the United States Army after 1945. Let us read a simple description of a QC or QIT:

> **What is a Quality Circle or Quality Improvement Team?**
>
> It is a group of 6 to 8 staff that volunteer to meet regularly to discuss quality related work problems so that they may examine and generate solutions to these problems. The QC/QIT is empowered to promote and bring quality improvement to fruition. The members are equipped with tools and techniques that may be used in approaching and solving problems.
>
> The QC/QIT has a skilled team leader who works as a facilitator or moderator of team efforts. He/She is not a dominator.

The QC/QIT needs to have a very good approach in:
1. Analyzing the problem, defining the problem and the relationships between component parts;
2. Developing quality objectives to be achieved and resources needed;
3. Developing and implementing solutions based on the objectives, and
4. Documenting solutions and results of implementation.

When we organize our own QC/QIT, we have to get the commitment from our Mayor and other senior level LGU staff since their support is very crucial to implementing solutions and making changes.

Tool No. 2: Basic Problem-Solving Process: The Plan-Do-Check and Act Cycle (PDCA)

Easy to implement and follow up, the most commonly used and well-known quality process is the Plan-Do-Check-Act cycle (PDCA). The PDCA cycle is used for both problem-solving and for continuous improvement and, thus, should be visualized as a spiral and not a closed circle. Once organized, our QC/QIT should use the PDCA. Looking at *Figure 1*, we start by defining and selecting one problem or opportunity and, thereafter, go through the steps until our desired results are seen.

Figure 1: PDCA Cycle

Plan
- Define problem or opportunity.
- Analyze situation (use tools: Pareto, Fishbone, other QI tools). Study, define problem and brainstorm for causes and corrective actions. Think creatively to determine the best approach and best possible corrective action.
  EXAMPLE: Improving client waiting time (from 30 mins. down to 15) based on the standards promoted under Sentrong Sigla)
- Develop implementation plan.
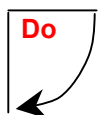
Do
- Implement corrective action, based on the implementation plan.
- Document the procedure and observations.
- Use data-gathering tools to collect information.
  EXAMPLE: Conduct activities to improve client waiting time

Check
- Analyze information.
- Monitor trends.
- Compare obtained results against expected results from the plan.
  EXAMPLE: Monitor/document activities at the RHU
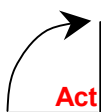
Act
- If the results are as expected, formalize the change. Determine if the practice will be expanded.

  EXAMPLE: Formalize new process and expand to other RHUs/BHS

If the results are NOT as expected, repeat the PDCA cycle.

The QC/QIT should understand the basic problem-solving or quality improvement process. To make the process proceed more quickly and systematically, simple tools for defining and analyzing problems can be used. These tools can include: cause and effect diagram also known as fish bone or Ishikawa diagram, Pareto charts and other tools like flow charts, histograms, etc. For this training, we will continue discussing the 2 most important tools we can use.

Tool No. 3: Defining the Problem and Analyzing the Situation: Using Pareto Diagrams

The Pareto diagram is named after Vilfredo Pareto, an Italian economist who postulated that a large share of wealth is owned by a small percentage of the population. This basic principle applies well to quality problems ------most of our problems on service quality result from a small number of causes. This is also referred to as the 80-20 rule; that is, 80% of our problems are caused by 20% of potential sources.

Why use it? A Pareto diagram puts data in a hierarchical order that allows the most significant problems to be corrected first. The chart appears much the same as a histogram or bar chart except that the bars are arranged in a descending order from left to right along the abscissa (x-axis/horizontal axis). The fundamental idea of using a Pareto diagram for quality improvement is the *ordering of factors* that contribute to a quality function.

Figure 2
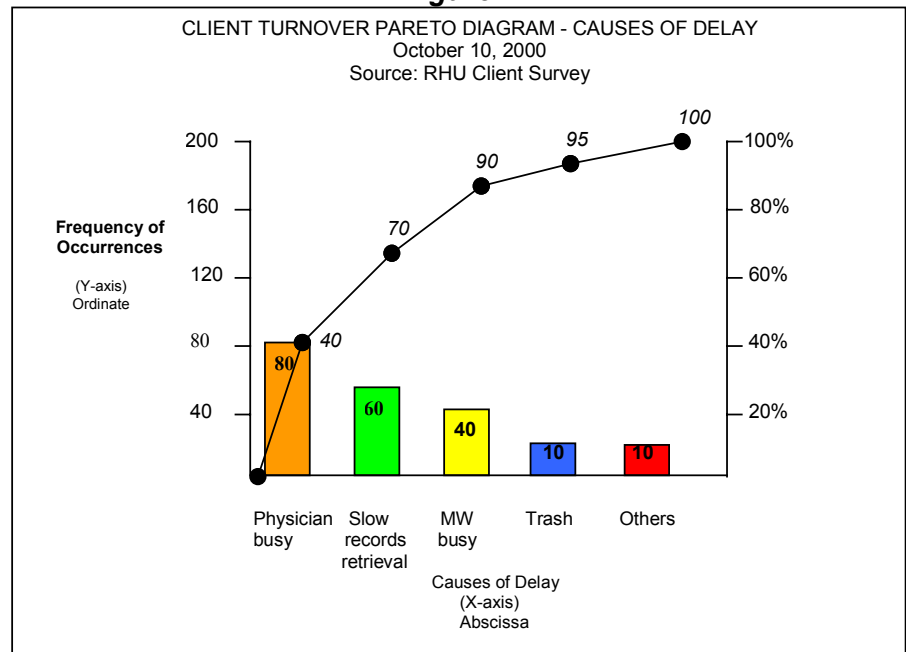
How is it done? To create a diagram, the QC/QIT gathers random data, groups responses into categories, regroups the categories in order of frequency and creates a bar graph based on the results.

For starters, the QIT identifies a problem, *e.g. delay in client turnover*, then gathers random data about it and creates a Pareto diagram based on the results.

The steps in creating the diagram are as follows:

1. Assemble data to be analyzed. A checklist (like a simple questionnaire) may be designed to collect the data, e.g. *causes for delays in client turnover (RHU) in others words, the RHU has a long waiting time for clients or patients.*

2. Add up the total number of responses for each item (cause) under analysis and list the causes in order of magnitude. Start with the highest (Columns 1 and 2 of Table 1 below).

Table 1

Causes (Col. 1)	Frequency (Col. 2)
Physician Busy	80
Slow records retrieval	60
Midwife Busy	40
Trash	10
Others	10
Grand Total	**200**

3. Calculate the total number of responses of all causes and the percentage of each cause. For each cause, write the % of the total (Column 3) and the cumulative percentage (Column 4). See Sample Table below.

Table 2

Causes (Col. 1)	Frequency (Col. 2)	Percent of Total (Col. 3)	Cumulative % (Col. 4)
Physician Busy	80	40	40
Slow records retrieval	60	30	70
Midwife Busy	40	20	90
Trash	10	5	95
Others	10	5	100
Grand Total	**200**	**100%**	**100%**

4. Draw a bar chart. Use the y-axis (ordinate) or vertical axis to show the volume of what you are comparing, e.g. frequency, cost or time; list the items from LEFT TO RIGHT in the x-axis (abscissa) or horizontal axis, arranged according to size, with the largest on left. You may group a lot of items with the fewest numbers under "Others." Above each item, draw a bar to a height that matches the frequency or count on the y-axis. The bars should be of the same width. Under the horizontal axis, label each of the bars.

Figure 3

CLIENT TURNOVER PARETO DIAGRAM - CAUSES OF DELAY
October 10, 2000
Source: RHU Client Survey
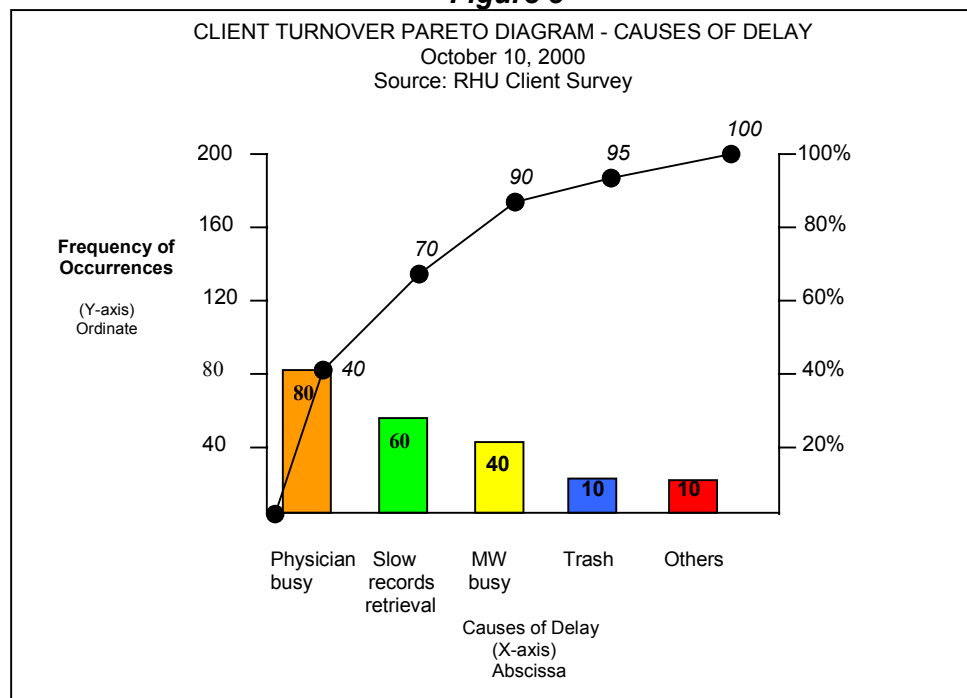
5. Draw the cumulative curve. Draw a line from where the axes start (x and y) to the upper right -hand corner of the first bar. Place a dot here and next to it, write the percentage calculated for that item. Make a second dot above the top right-hand corner of the second bar to represent aligned with the value on the y-axis that represents the cumulative percentage total of the said bar(i.e. the total of the first and second items added together). Join it to the first dot and write the cumulative percentage beside it. Continue until the last cumulative total has been plotted (this should be equal to 100).

On the right-hand side of the diagram, next to the last bar, draw in a second vertical axis that starts at zero and has 100% aligned with the rest of the cumulative curve.

Figure 4

CLIENT TURNOVER PARETO DIAGRAM - CAUSES OF DELAY
October 10, 2000
Source: RHU Client Survey
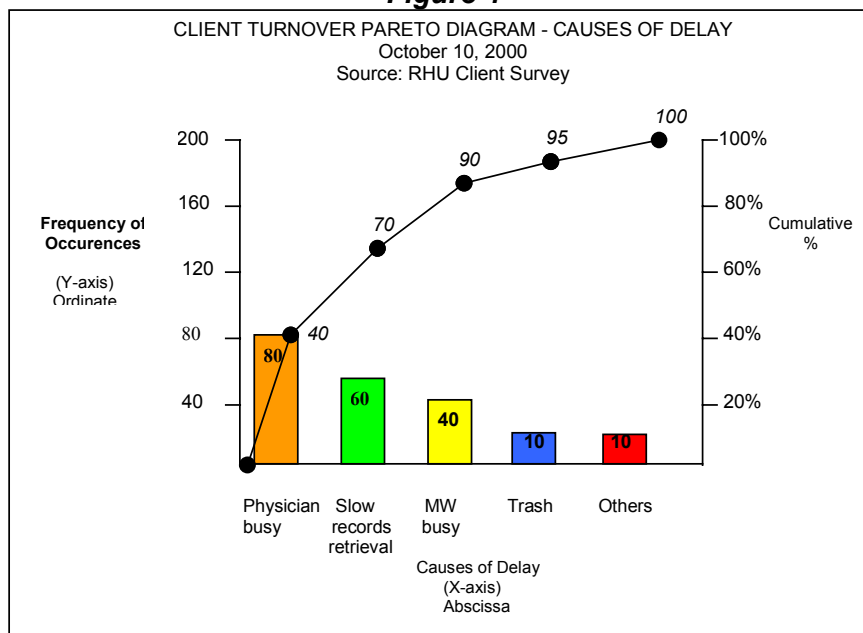
6. Label the diagram with a title, including the date it was drawn and the source of the data.

7. Interpret the diagram. In general, the items requiring priority action, the "vital few", will appear on the left of the diagram where the slope of the curve is steepest. When comparing before and after, the improvement measures are effective, either the order of the bars will change or the curve will be much flatter.

Let us try to apply these steps by doing Case Study #1 (See Annex C.)

☞Facilitator: Ask the participants to select from among the problems identified in Step 2: Defining Quality Assurance (page 7) that they would want to analyze using the Pareto Diagram.

Tool No. 4. Defining the Problem and Analyzing the Situation: Using the Cause and Effect Diagram also known as Fish Bone or Ishikawa Diagram

One of the easiest and most popular tools to diagnose possible causes of a problem is the use of a Cause and Effect Diagram, also known as Ishikawa diagram, after the inventor, and a fish bone diagram, after its shape. This diagram describes the relationship between variables and the undesirable outcome is the effect. The related causes are shown as leading to, or potentially leading to, the said effect. **If the goal of problem solving is to identify the *causes* of the problems in order to correct them, then this diagram is the most important tool for this task.** The diagram helps in generating ideas for problem causes and, in turn, serves as a basis for solution finding.

Why use it? This is an indispensable tool allowing the health team to identify, explore and graphically display all possible root causes related to a problem or condition. *It enables the team to focus on the content of the problem, not on the history and creates a snapshot of the collective knowledge and consensus of the team around a problem. This builds support for the resulting solutions.*

The fish bone diagram (Figure 5) displays all contributing factors and their relationships to the problem. It will show areas where data should be collected and analyzed. The major causes are shown as the main bones, e.g., *materials, methods, people, etc.* Other levels of causes, which are connected to the major causes, may also be identified.

Figure 5: The Cause and Effect diagram can show the different types of causes and the different related causes all potentially leading to the effect.
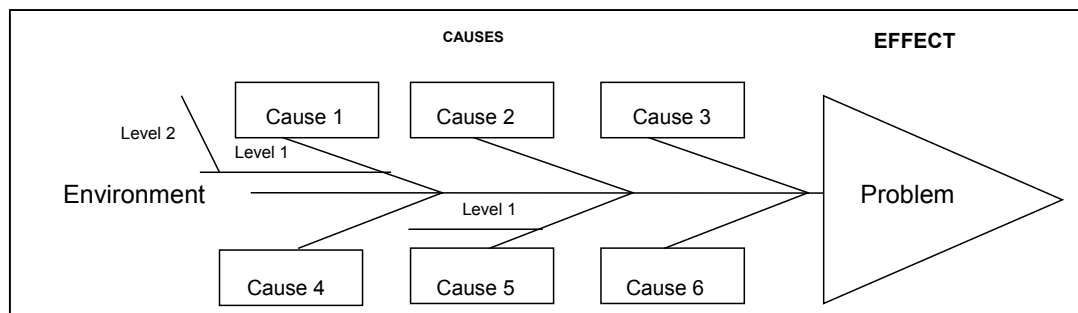
How is it done?

1. We start with the "Brainstorm Phase." Let us ask ourselves, "Why does it happen?" Then we list individual causes and then place each cause within each *major* cause until we run out of causes. In each major cause there may be different levels of related causes (See Figure 5 which has Level 1 and Level 2 causes).

   There is no perfect number of categories of causes. The QIT should make them fit the problem at hand, although environment (buildings/infrastructure, logistics and space) and measurement (calibration and data collection) are also frequently used as categories of causes.

2. Construct the cause and effect diagram. Place the problem in a box on the right side of the writing surface (the fish head), then draw the major causes/categories in the fish spine. Connect them to the backbone of the fish bone. After doing the fishbone, we get to see the main causes and other related causes so that when we design solutions to the problem, we will be able to cover all aspects.

Let's go to Annex D for Case Study #2.

☞*Facilitator:*

Instruct the group to refer to Annex D to do a group exercise. The group will do the exercise like they were a QC/QIT.

STEP 4. APPLYING THE TOOLS TO IMPROVE QUALITY

To put it simply, whenever the QIT identifies an area for improvement, the team gets into the PDCA cycle (which looks like a wheel.) As part of the planning step, the team may employ the fish bone and Pareto diagrams and then takes action by going through the entire cycle. See Figure 6 below. The PLAN part has an arrow that means it is the first step in the cycle and the team proceeds to conduct the activity and go through the rest of the steps. If the results are not as expected, the cycle is repeated.

Figure 6: Applying PDCA and other tools
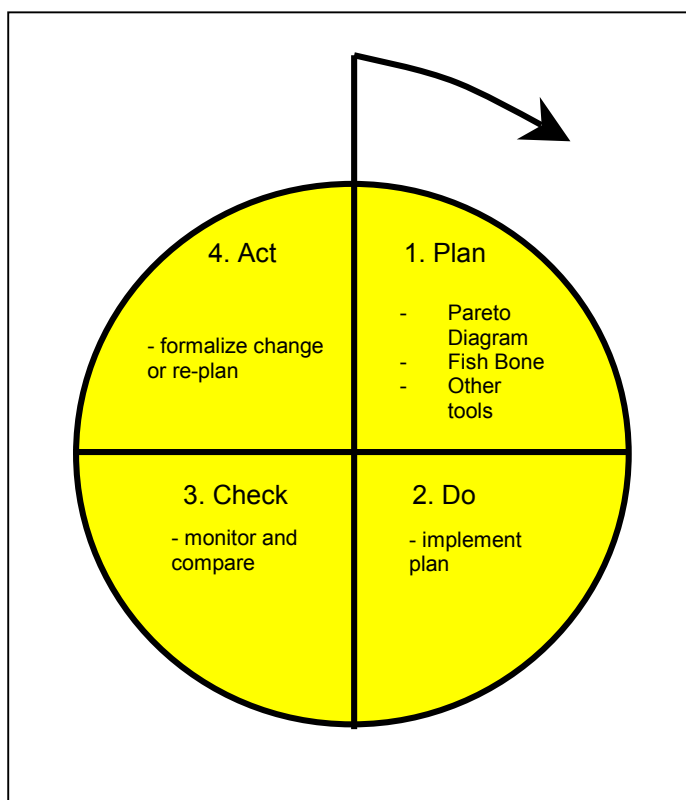
STEP 5: MAKING OUR LOCAL PLAN TO IMPROVE QUALITY

After discussing the concepts on quality, we are now ready to prepare our local plan. We will get the commitment of everyone attending today and agree to prepare a work plan.

However, the first activity we have to do now is to organize a QC/QIT in our health facility. Our municipal/city health officer/physician-in-charge will lead us in organizing and identifying staff that will be willing to be members. Let us call on our MHO/CHO/Physician-in-charge to lead us in organizing our team.

> Exercise: The MHO/CHO/Physician in charge will ask the participants as to who would be willing to participate as members of the QC/QIT. Once identified the team will agree to meet regularly to address quality related problems or issues.
>
> Time: 15 minutes

Now that we have identified our QC/QIT members who will make sure we implement our local work plan, let us use the form below to identify our activities with persons responsible, the timeframe and resource requirements. **However, in line with the DOH's "Sentrong Sigla Movement," let us focus on our first challenge, to be "Sentrong Sigla" certified.** The standards for RHUs/HCs are in Annex E and we can use this document as a reference. Let us pursue Sentrong Sigla related activities for the next 4 weeks so that we will be certified as providing quality services as soon as possible. Let us also include other problems we have identified in Step 2 and 3. Let us remember that we can use the PDCA cycle and the other techniques as well.

Let us continue and spend at least 30 minutes to decide on our activities

OUR LOCAL PLAN

Activity	Person Responsible	Time Frame Day/Date	Resource Requirements	Status/Comments

Now that we are done with our plan, let us ensure that all of us have copies of the plan so that in our next meeting we can monitor how well we are proceeding with our activities.

That's all for today.

END OF SESSION

Annex A.

Municipal Health Diagnosis: Mission and Services offered in the municipality, and Monitoring and Supervision System/s

A. What is the Municipality's Health Mission?
    Write down the Mission in the spaces provided below.
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____

B. What is the Range of Services offered at the RHUs and BHS? Indicate all the services including diagnostic and mobile clinics.

Type of Service	Description

Note: Add more pages, if necessary.

C. Description of monitoring and supervisory systems.
   Describe the existing monitoring and supervision systems that are in place in the municipality. In particular, describe who monitors or supervises the nurses, the midwives, the BHW and BSPOs; how often the supervisor conducts or observes the staff; how feedback on the results of the supervision are given and how the results are used by the supervisor.

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D. Are there written guidelines or policies on supervision?

If yes, does everybody know about its existence? If the answer is no, why not? Is anything being done about this?

_____
_____
_____
_____
_____

If there aren't, why are there no written guidelines or policies? Are there plans to have these written down and disseminated?

_____
_____
_____
_____

Note: Add more pages, if necessary

ANNEX B.

FACILITY SURVEY ON QUALITY DESIGN, CONTROL AND IMPROVEMENT

No.	Question	Response T- true F- false
1	Our rural health unit (RHU)/health center (HC) has a mission and a vision. These are placed in an area where anybody can see them.	
2	We have a team in the facility in charge of solving problems and coming up with solutions, e.g. problems on drug procurement and storage, service delivery interventions.	
3	We have existing job descriptions that list the things that everybody should do or perform.	
4	We have existing written guidelines for supervisors, e.g. how to supervise, what to look out for and how to provide feedback to supervised staff.	
5	We regularly conduct program review /review of our accomplishments.	

ANNEX C.

CASE STUDY NO.1
USING THE PARETO DIAGRAM

The Pareto Chart is a tool for displaying data collected about potential causes. It is a useful way to analyze potential causes in order to identify the most significant cause(s) of a problem.

The Pareto chart combines a bar graph with a cumulative line graph. The bars are placed from left to right in descending order. The cumulative line graph shows the percent contribution of all preceding bars**.** The Pareto Diagram shows where effort can be focused for maximum benefit.

Individual Case Study No. 1

The **Masipag RHU** Quality Circle (QC) in one of their regular QC meetings decided to tackle one complaint that they have heard from a few clients/patients in their catchment area: **long waiting time** for clients coming for consultation. The same complaint was also mentioned by three (out of 7) community health volunteer workers in the last two weekly meetings as a feedback from their household visits in their respective barangays.

As part of their problem solving exercise using the **PDCA (Plan-Do-Check and Act)** approach, they decided, as a first step, to **PLAN** as a team and solve the problem. First, they decided to conduct an informal survey to gather information on the "long waiting time" at the RHU. One member of the QC was tasked to develop a simple survey form to gather information on the perceived causes of long client waiting time. See form below:

Survey Form Number: _____

What do you think are the most common causes why you have to wait long for the health staff to attend to you? (Place a check for your 1st, 2nd and 3rd choices only):

_____A. The midwife in charge of registration of clients/patients is very busy attending to other matters other than registration, e.g. doing reports, updating charts, doing inventory of drugs, etc.

_____B. The doctor is attending to too many patients so the patients after registration have to line up and wait for the physician to be free.

_____C. The health staff in charge of retrieving client records takes a long time to get our family folders.

_____D. The RHU opening time is late (10 am) and the number of clients waiting adds-up.

_____E. In general, the total number of health staff is insufficient to cater to the needs of the clients.

_____F. Other reasons that you know of but are not listed above. Please enumerate.

_____

_____

The QC members conducted the survey among 200 walk-in clients/patients in the RHU in two weeks and gathered the information. Among 200 patients surveyed, the most common reasons that they think resulted to or contributed to a longer than usual waiting time, according to the number of checks.

Reason/Causes	Frequency
The health staff in charge of retrieving client records takes a long time to get our family folders.	200
The doctor is attending to too many patients so the patients after registration have to line up and wait for the physician to be free.	190
The midwife in charge of registration of clients/patients is very busy attending to other matters other than registration, e.g. doing reports, updating charts, doing inventory of drugs, etc.	150
The RHU opening time is late (10 am) and the number of clients waiting adds-up.	30
In general, the total number of health staff is insufficient to cater to the needs of the clients.	30
Others	0
Grand Total	**600**

Based on the results of the survey, make a Pareto Diagram to help the QC make a decision on what the most common causes of "long waiting time" are.

ANNEX D.

CASE STUDY NO.2
## USING THE FISH BONE DIAGRAM/ISHIKAWA DIAGRAM

The Fish Bone Diagram is an analysis tool that provides a systematic way of looking at effects and the causes that create or contribute to those effects. Because of the function of the fish bone diagram, it may be referred to as a Cause and Effect Diagram. The design of the diagram looks like a skeleton of a fish therefore it is frequently called a fish bone diagram. Whatever name you call it, remember that the value of the diagram is to assist the QC team in categorizing the many potential causes of a problem or issue in an orderly way and identifying its root causes.

Tip: For every potential cause (equivalent to one spine in the fishbone) the QC team will ask "why is this factor happening?" until sub-causes are exhausted until the team can no longer get useful information by asking "why is this happening." Then the team proceeds to identify other potential causes, so on and so forth. The idea is, by looking at all those items that appear repetitively, the team will identify the most likely causes.

Group Case Study No. 2

Still in the **PLAN** or first step of the **PDCA (Plan-Do-Check and Act)** approach, after the **Masipag RHU** Quality Circle (QC) made a Pareto Diagram, they found out that the major cause of "long waiting time" is that "*health staff in charge of retrieving client records takes a long time to get the family folders.*" The QC decided to determine the root cause of **"slow retrieval of client records**." They decided to conduct a brainstorming session where they will identify all causes resulting to slow retrieval of records. They will construct a fish bone diagram during the brainstorming to help them analyze the problem.

With "slow retrieval of client records" as the problem/issue, help the Masipag RHU QC by completing the fish bone diagram below. Exhaust all possible categories of causes that contribute to the problem/issue. You can have several levels for the causes and just add lines from the major causes.

CAUSES   **EFFECT**

Slow Retrieval
of Client
records
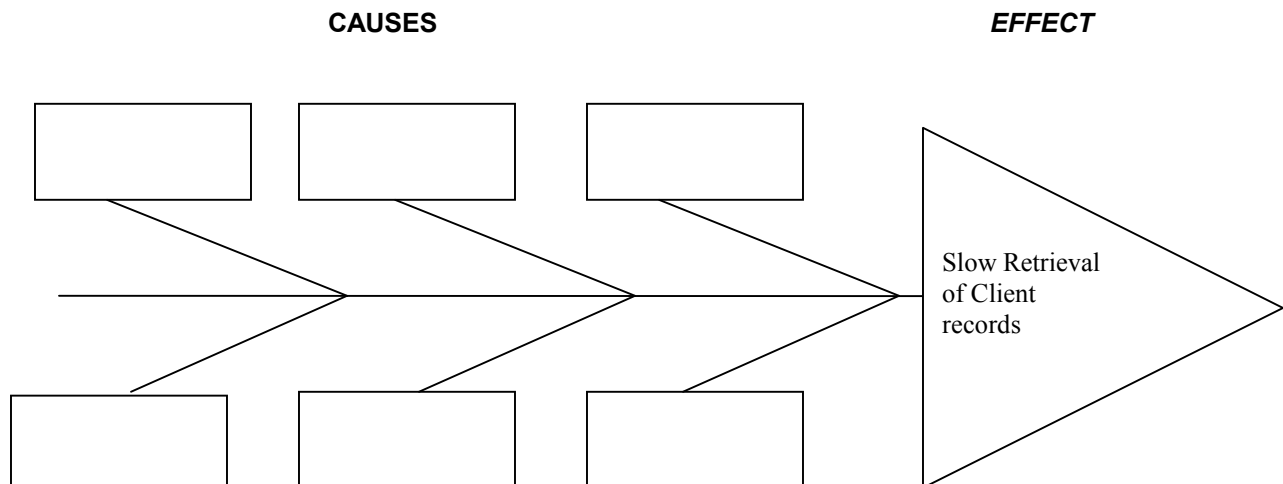
Annex E.

Sentrong Sigla Standards for RHUS/HCs
(Level 1)